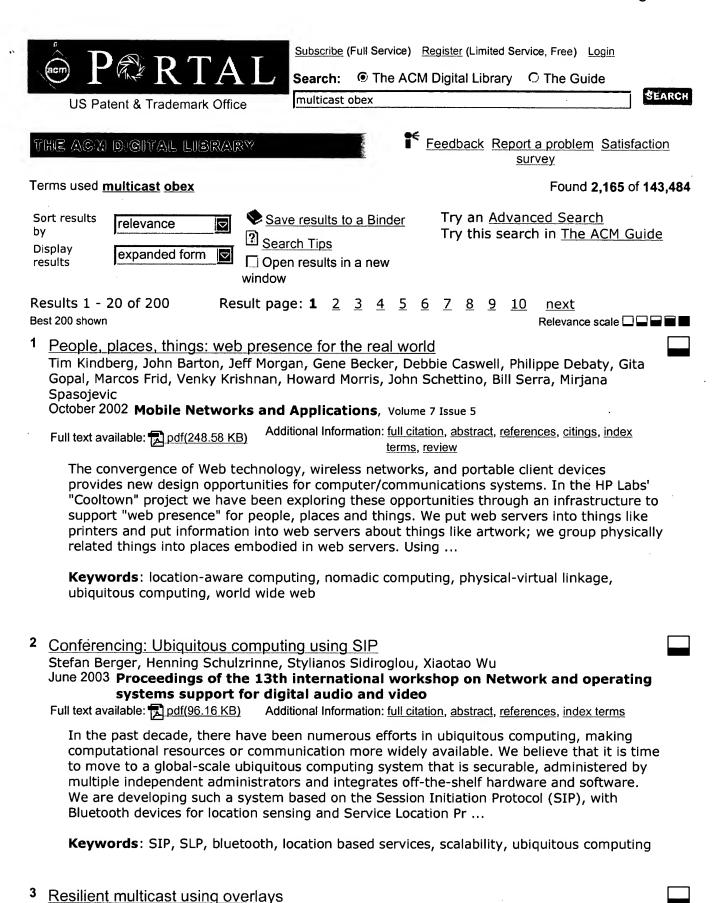
L Number	Hits		DB	Time stamp
1	31733	709/\$.ccls.	USPAT;	2004/10/14 23:13
			US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
			IBM_TDB	,
2	2513	1	USPAT	2004/10/14 23:17
-	39	1	USPAT	2004/10/14 18:52
-	5	,	USPAT	2004/08/31 22:16
-	4	((multicast near2 channel) with	USPAT	2004/08/31 22:16
		advertisement) and network and rout\$4		
-	0		USPAT	2004/08/31 22:16
		advertisement) and network and rout\$4 and		
		xml	******	2004/20/24 20 44
_	24	(multicast near2 channel) and advertisement and xml	USPAT	2004/10/14 18:44
			I I I C D A III	2004/00/21 22 10
-	23		USPAT	2004/08/31 22:18
		and xml and rout\$4 and protocol	TICDATE	2004/10/14 22:15
-	0	(multicast near2 channel) and advertisement and xml and routable and protocol	USPAT	2004/10/14 23:15
	23	1	USPAT	2004/08/31 22:18
-	23	and xml and rout\$4 and protocol and	USPAI	2004/08/31 22:18
		(advertisement advertizement ad)		
1_	22	,	USPAT	2004/10/12 21:13
	22	and xml and rout\$4 and protocol and	OSFAI	2004/10/12 21:13
		(advertisement advertizement ad) and object		
		and exchange		
_	0		USPAT	2004/08/31 22:19
		and xml and rout\$4 and protocol and	002777	2001/00/31 22:13
		(advertisement advertizement ad) and (object		
		near2 exchange)		
-	112	_ ·	USPAT;	2004/08/31 22:23
		and xml and rout\$4 and protocol and	US-PGPUB;	
		(advertisement advertizement ad) and object	EPO; JPO;	
Ì		and exchange	DERWENT;	
			IBM_TDB	·
-	1.69	obex	USPAT;	2004/10/12 21:15
			US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
	25	ah au	IBM_TDB	2004/00/22 22 26
-	25	obex obex and multicast and adverti\$5 and	USPAT	2004/08/31 22:26
1		i ·	USPAT	2004/08/31 22:25
1_	0	(channel link) and protocol and rout\$4 obex and multicast and adverti\$5	USPAT	2004/08/31 22:25
-	0		USPAT	2004/08/31 22:25
_		obex and multicast obex and advertisement and protocol	USPAT	2004/08/31 22:25
_	0	•	USPAT	2004/08/31 22:20
		and xml and obex		=====================================
-	0		USPAT;	2004/10/12 21:14
1.		and xml and rout\$4 and protocol and	US-PGPUB;	
		(advertisement advertizement ad) and (object	EPO; JPO;	
		adj exchange)	DERWENT;	
			IBM TDB	
-	0	(multicast near2 channel) and advertisement	USPAT;	2004/10/12 21:14
		and xml and rout\$4 and protocol and	US-PGPUB;	
		(advertisement advertizement ad) and (object	EPO; JPO;	
		adj exchange obex)	DERWENT;	
			IBM_TDB	
-	27	obex and (multicast point\$to\$multipoint)	USPAT;	2004/10/12 21:17
			US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
		about and (millioners and such as a section of	IBM_TDB	2004/10/10 25 55
_	8	obex and (multicast point\$to\$multipoint) and	USPAT;	2004/10/12 21:18
		advertis\$5	US-PGPUB;	
			EPO; JPO; DERWENT;	
			IBM TDB	
L	L	L	T TOTAL T T D D	L.,

			1	
-	11	(obex (object near2 exchange near4	USPAT;	2004/10/12 21:24
		protocol)) and (multicast point\$to\$multipoint) and advertis\$5	US-PGPUB; EPO; JPO;	
		point;to;multipoint/ and advertis;	DERWENT;	
			IBM TDB	
1 -	4	("5638399" "5930700" "6091956"	USPAT	2004/10/12 21:20
		"6167255").PN.		0001, 10, 12 21.20
-	35	(obex (object near2 exchange near4	USPAT;	2004/10/12 21:22
		protocol)) and (multicast	US-PGPUB;	
		point\$to\$multipoint)	EPO; JPO;	*
			DERWENT;	
			IBM_TDB	
-	16	"6446127"	USPAT;	2004/10/12 21:53
			US-PGPUB;	
			EPO; JPO;	1
			DERWENT;	
_	225	(obex (object near2 exchange near4 protocol)	IBM_TDB USPAT;	2004/10/12 21:25
	223	IrOBEX IrDA) and (multicast	US-PGPUB;	2004/10/12 21:25
		point\$to\$multipoint) and advertis\$5	EPO; JPO;	
1		point to time to include the control of the control	DERWENT;	·
			IBM TDB	
-	142	(obex (object near2 exchange near4 protocol)	USPAT;	2004/10/12 21:26
		IrOBEX IrDA) and ((multicast	US-PGPUB;	
		point\$to\$multipoint) near3 channel) and	EPO; JPO;	
		advertis\$5	DERWENT;	
			IBM_TDB	
-	141		USPAT;	2004/10/12 22:19
		IrOBEX IrDA) and ((multicast	US-PGPUB;	
	•	<pre>point\$to\$multipoint) near3 channel) and advertis\$5 and stor\$3</pre>	EPO; JPO; DERWENT;	
		advertis55 and stor55	IBM TDB	
_	1 1	(obex (object near2 exchange near4 protocol)	USPAT;	2004/10/12 21:40
1		IrOBEX IrDA) and ((multicast	US-PGPUB;	
		point\$to\$multipoint) near3 channel) and	EPO; JPO;	
		advertis\$5 and stor\$3 and (service with	DERWENT;	
		location with discovery with protocol)	IBM_TDB	
-	3		USPAT;	2004/10/12 21:42
		IrOBEX IrDA) and ((multicast	US-PGPUB;	
		point\$to\$multipoint) near3 channel) and	EPO; JPO;	
		advertis\$5 and stor\$3 and (service with	DERWENT;	
		location with discovery with protocol(slp sdp))	IBM_TDB	
_	3	(obex (object near2 exchange near4 protocol)	USPAT;	2004/10/12 21:42
		IrOBEX IrDA) and ((multicast	US-PGPUB;	2004/10/12 21:42
		point\$to\$multipoint) near3 channel) and	EPO; JPO;	
		(service with location with discovery with	DERWENT;	
1		protocol (slp sdp))	IBM_TDB	
-	47		USPAT;	2004/10/14 21:41
		IrOBEX IrDA) and ((multicast	US-PGPUB;	
		point\$to\$multipoint)) and (service with	EPO; JPO;	
]		location with discovery with protocol (slp sdp))	DERWENT;	
_	160	sdp;; (guttman).in.	IBM_TDB USPAT;	2004/10/12 21:47
1	100	(Succellatt) . Itt.	US-PGPUB;	2004/10/12 21:4/
			EPO; JPO;	
1		·	DERWENT;	
			IBM_TDB	
-	1	(erik near guttman).in.	USPĀT;	2004/10/12 21:46
			US-PGPUB;	
1			EPO; JPO;	
			DERWENT;	
	_	(mutters) in and all	IBM_TDB	0004/10/50 55 55
-	0	(guttman).in. and sdp	USPAT;	2004/10/12 21:47
1			US-PGPUB; EPO; JPO;	
			DERWENT;	
			IBM TDB	
			·	·

-	0	(guttman).in. and slp	USPAT;	2004/10/12 21:47
			US-PGPUB;	
İ			EPO; JPO;	
			DERWENT;	
-	0	"6446127" and slp and sdp and obex	USPAT;	2004/10/12 21:48
	"	0440127 und SIP und Sup und ODEX	US-PGPUB;	2004/10/12 21:48
			EPO; JPO;	
			DERWENT;	
		, the state of the	IBM TDB	
-	0	"6446127" and obex	USPAT;	2004/10/12 21:48
			US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
			IBM_TDB	
-	9	(schuster).in. and Irda	USPAT;	2004/10/14 19:13
		,	US-PGPUB;	
		•	EPO; JPO;	
			DERWENT;	
			IBM_TDB	
-	0	((schuster).in. and Irda) and multicast	USPAT;	2004/10/12 21:55
			US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
_	0	((schuster).in. and Irda) and advertisment	IBM_TDB	2004/10/12 21 55
	"	and obex	USPAT; US-PGPUB;	2004/10/12 21:55
		and obex .	,	
			EPO; JPO; DERWENT;	
			IBM TDB	
_	0	((schuster).in. and Irda) and obex	USPAT;	2004/10/12 21:55
		/ (behabeer) . III. and II day and obex	US-PGPUB;	2004/10/12 21:55
		,	EPO; JPO;	
			DERWENT;	
			IBM TDB	,
_	0	(schuster).in. and Irda and obex	USPAT;	2004/10/12 21:55
			US-PGPUB;	2001, 10, 12 21.33
			EPO; JPO;	
			DERWENT;	
			IBM TDB	,]
-	54	, , , , , , , , , , , , , , , , , , , ,	USPAT	2004/10/12 22:23
		IrOBEX IrDA) and (multicast		· · ·
		point\$to\$multipoint)		
-	5	(obex (object near2 exchange near4 protocol)	USPAT	2004/10/12 22:22
		IrOBEX IrDA) and (multicast		
		point\$to\$multipoint) and (slp sdp)		
- 00	41	(obex (object near2 exchange near4 protocol)	USPAT	2004/10/12 22:23
		IrOBEX IrDA) and (multicast		
1_	35	point\$to\$multipoint) and listen\$3	11002	0004/30/30 55 55
-	35	'	USPAT	2004/10/12 22:23
1		<pre>IrOBEX IrDA) and (multicast point\$to\$multipoint) and listen\$3 and</pre>		
		advertis\$5		
_	5	ddvertis55 ("5386568" "6032198" "6247020" "6351776" "6591	זגרו ידו(אונבססוני	2004/10/14 18:45
_	1	("5366566" "6032198" "6247020" "6351776" "659. "6799318"	USPAT	2004/10/14 18:45
-	32	(multicast near2 channel) with listen\$3 and	USPAT	2004/10/14 18:45
		advertisement	ODERI	2004/10/14 10:54
-	0	(multicast near2 channel) with listen\$3 and	USPAT	2004/10/14 18:55
		(rout\$5 same protocol same advertisement)		2001/10/14 10.55
-	3		USPAT	2004/10/14 18:55
		protocol same advertisement)		
-	0	protocol and sdp and multicast and slp and	USPAT;	2004/10/14 19:14
	1	irda and advertisement and rout\$5 and	US-PGPUB;	
		transport and listen\$3	EPO; JPO;	
		·	DERWENT;	
1			IBM TDB	
-	2	protocol and sdp and multicast and irda and	USPAT;	2004/10/14 19:15
		advertisement and rout\$5 and transport and	US-PGPUB;	
1		listen\$3	EPO; JPO;	
	1		DERWENT;	
		·	IBM_TDB	
		······································		

_	1135	transport adj layer and multicast	USPAT; US-PGPUB;	2004/10/14 19:16
			EPO; JPO; DERWENT; IBM TDB	·
-	5	transport adj layer and (multicast with channel with listen\$3)	USPAT; US-PGPUB;	2004/10/14 19:18
			EPO; JPO; DERWENT;	
-	5	(transport protocol\$1) adj layer and (multicast with channel with listen\$3)	IBM_TDB USPAT; US-PGPUB; EPO; JPO;	2004/10/14 19:19
			DERWENT; IBM_TDB	
-	16	<pre>(transport protocol\$1) near2 (layer framework) and (multicast with channel with listen\$3)</pre>	USPAT; US-PGPUB; EPO; JPO; DERWENT;	2004/10/14 19:23
-	18	(transport protocol\$1) near2 (layer framework) and (multicast with channel\$1 with listen\$3)	IBM_TDB USPAT; US-PGPUB; EPO; JPO;	2004/10/14 19:23
-	7	(transport protocol\$1) near2 (layer framework) and (multicast with channel\$1	DERWENT; IBM_TDB USPAT; EPO; JPO;	2004/10/14 19:24
į		with listen\$3)	DERWENT; IBM_TDB	
-	0	multcast same channel\$1 same advertisement same rout\$5	USPAT; EPO; JPO; DERWENT;	2004/10/14 19:26
-	3	multicast same channel\$1 same advertisement same rout\$5	IBM_TDB USPAT; EPO; JPO; DERWENT;	2004/10/14 19:27
-	7133	multicast	IBM_TDB USPAT; EPO; JPO;	2004/10/14 19:31
-	4	multicast and routable adj network	DERWENT; IBM_TDB USPAT; EPO; JPO; DERWENT;	2004/10/14 19:29
-	427	<pre>multicast and (multi near2 protocol\$1 multi\$protocol\$1)</pre>	IBM_TDB USPAT; EPO; JPO;	2004/10/14 19:32
-	14	multicast and (multi near2 protocol\$1 multi\$protocol\$1) and channel and listen\$3 and advertisement	DERWENT; IBM_TDB USPAT; EPO; JPO; DERWENT;	2004/10/14 19:57
-	125		IBM_TDB USPAT; EPO; JPO;	2004/10/14 21:21
-	12	object with data with mapping with relational with (utility tool)	DERWENT; IBM_TDB USPAT; EPO; JPO;	2004/10/14 19:50
-	7		DERWENT; IBM_TDB USPAT; EPO; JPO;	2004/10/14 19:50
-	14	multi\$protocol\$1) and channel and listen\$3	DERWENT; IBM_TDB USPAT; US-PGPUB;	2004/10/14 19:57
		and advertisement	EPO; JPO; DERWENT; IBM_TDB	

	3	multicast and (multi near2 protocol\$1	USPAT;	2004/10/14 19:57
		multi\$protocol\$1) and (channel\$1 near2	US-PGPUB;	2004/10/14 19:5/
		listen\$3) and advertisement	EPO; JPO;	
		listenss, and advertisement		
			DERWENT;	
			IBM_TDB	
-	60		USPAT;	2004/10/14 21:22
		relational and inheritance	EPO; JPO;	
			DERWENT;	
			IBM_TDB	
-	60	(object with data with mapping with	USPAT;	2004/10/14 21:22
		relational) and inheritance	EPO; JPO;	
			DERWENT;	
			IBM TDB	
_	113	(obex (object near2 exchange near4 protocol)	USPAT:	2004/10/14 21:42
		IrOBEX IrDA) and ((multicast	US-PGPUB;	2001, 20, 21 22 12
		point\$to\$multipoint)) and browser	EPO; JPO;	
		point of to a market	DERWENT;	
			1	
		/about /abiast many auchance many suchasel)	IBM_TDB	2004/30/34 22 32
_	56		USPAT;	2004/10/14 23:12
		IrOBEX) and browser	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
			IBM_TDB	



June 2003 ACM SIGMETRICS Performance Evaluation Review, Proceedings of the

Suman Banerjee, Seungjoon Lee, Bobby Bhattacharjee, Aravind Srinivasan

2003 ACM SIGMETRICS international conference on Measurement and modeling of computer systems, Volume 31 Issue 1

Full text available: pdf(244.39 KB)

Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index</u> <u>terms</u>

We introduce PRM (Probabilistic Resilient Multicast): a multicast data recovery scheme that improves data delivery ratios while maintaining low end-to-end latencies. PRM has both a proactive and a reactive component; in this paper we describe how PRM can be used to improve the performance of application-layer multicast protocols, especially when there are high packet losses and host failures. Further, using analytic techniques, we show that PRM can guarantee arbitrarily high data delivery ratios ...

Keywords: overlay multicast, randomized forwarding, resilience

4	Ordered Multicast and Distributed Swap	
	Maurice Herlihy, Srikanta Tirthapura, Roger Wattenhofer January 2001 ACM SIGOPS Operating Systems Review, Volume 35 Issue 1	
	Full text available: pdf(587.36 KB) Additional Information: full citation, abstract	
	A multicast protocol is <i>ordered</i> (or <i>totally ordered</i>) if it ensures that messages multicast to a group of nodes are delivered in the same order at each destination node, even when those messages are generated concurrently from several sources. Ordered multicast is a natural foundation for push-based cache coherence and certain kinds of middleware. This paper shows how to reduce the complex problem of enforcing multicast ordering to a simpler distributed coordination problem we call <	
5	Full papers: SAKM: a scalable and adaptive key management approach for multicast	

Yacine Challal, Hatem Bettahar, Abdelmadjid Bouabdallah
April 2004 ACM SIGCOMM Computer Communication Review, Volume 34 Issue 2

Full text available: pdf(480.59 KB) Additional Information: full citation, abstract, references

Multicasting is increasingly used as an efficient communication mechanism for group-oriented applications in the Internet. In order to offer secrecy for multicast applications, the traffic encryption key has to be changed whenever a user joins or leaves the system. Such a change has to be communicated to all the current users. The bandwidth used for such rekeying operation could be high when the group size is large. The proposed solutions to cope with this limitation, commonly called *1 affect* ...

Keywords: Multicat, key management, scalability, security

6 Multicast and antennas: An adaptive strategy for maximizing throughput in MAC layer wireless multicast

Prasanna Chaporkar, Anita Bhat, Saswati Sarkar

May 2004 Proceedings of the 5th ACM international symposium on Mobile ad hoc networking and computing

Full text available: pdf(234.46 KB) Additional Information: full citation, abstract, references, index terms

Bandwidth efficiency of wireless multicast can be improved substantially by exploiting the fact that several receivers can be reached at the MAC layer by a single transmission. The multicast nature of the transmissions, however, introduces several design.

Keywords: MAC layer scheduling, stability, throughput optimal policy, wireless multicast

7	Multicast and antennas: Antenna orientation optimization for minimum-energy multicast	
	tree construction in wireless ad hoc networks with directional antennas	
	S. Guo, O. W. Yang	
	May 2004 Proceedings of the 5th ACM international symposium on Mobile ad hoc networking and computing	
	Full text available: pdf(328.65 KB) Additional Information: full citation, abstract, references, index terms	
	Energy conservation is a critical issue in wireless ad hoc networks since batteries are the	
	only energy source to power the nodes. One major metric for energy conservation is to route a communication session along the routes which require the lowest total.	
	Keywords : directional antenna, integer programming, minimum-energy routing, multicast tree, wireless ad hoc networks	
8	Secure group management: Secure multicast groups on ad hoc networks	
	T. Kaya, G. Lin, G. Noubir, A. Yilmaz October 2003 Proceedings of the 1st ACM workshop on Security of ad hoc and sensor	
	networks Full text available: pdf(212.24 KB) Additional Information: full citation, abstract, references, index terms	
	In this paper we address the problem of secure multicast of data streams over a multihop wireless ad hoc network. We propose a dynamic multicast group management protocol that	
	aims at solving problems that are specific to ad hoc networks such as mobility, unreliable links, and cost of multihop communication. The main idea is to have group members actively participate to the security of the multicast group, therefore reducing the	
	communication and computation load on the source. Since the group s	
	Keywords : MANET, multihop ad hoc, secure multicast, tracking	
	Keywords : MANET, multihop ad hoc, secure multicast, tracking	
9	3D multimedia environments: Design of a multi-sender 3D videoconferencing	
9	3D multimedia environments: Design of a multi-sender 3D videoconferencing application over an end system multicast protocol	
9	3D multimedia environments: Design of a multi-sender 3D videoconferencing application over an end system multicast protocol Mojtaba Hosseini, Nicolas D. Georganas November 2003 Proceedings of the eleventh ACM international conference on	
9	3D multimedia environments: Design of a multi-sender 3D videoconferencing application over an end system multicast protocol Mojtaba Hosseini, Nicolas D. Georganas	
9	3D multimedia environments: Design of a multi-sender 3D videoconferencing application over an end system multicast protocol Mojtaba Hosseini, Nicolas D. Georganas November 2003 Proceedings of the eleventh ACM international conference on Multimedia Full text available: pdf(872.17 KB) Additional Information: full citation, abstract, references, index terms Videoconferencing in the context of 3D virtual environments promises better spatial	
9	3D multimedia environments: Design of a multi-sender 3D videoconferencing application over an end system multicast protocol Mojtaba Hosseini, Nicolas D. Georganas November 2003 Proceedings of the eleventh ACM international conference on Multimedia Full text available: pdf(872.17 KB) Additional Information: full citation, abstract, references, index terms Videoconferencing in the context of 3D virtual environments promises better spatial consistency and mutual awareness for its participants. However, in the absence of IP	
9	3D multimedia environments: Design of a multi-sender 3D videoconferencing application over an end system multicast protocol Mojtaba Hosseini, Nicolas D. Georganas November 2003 Proceedings of the eleventh ACM international conference on Multimedia Full text available: pdf(872.17 KB) Additional Information: full citation, abstract, references, index terms Videoconferencing in the context of 3D virtual environments promises better spatial consistency and mutual awareness for its participants. However, in the absence of IP Multicast and limited upload bandwidth of today's DSL connections, the feasibility of such systems in supporting even a small group of users is in question. This paper presents the	
9	3D multimedia environments: Design of a multi-sender 3D videoconferencing application over an end system multicast protocol Mojtaba Hosseini, Nicolas D. Georganas November 2003 Proceedings of the eleventh ACM international conference on Multimedia Full text available: pdf(872.17 KB) Additional Information: full citation, abstract, references, index terms Videoconferencing in the context of 3D virtual environments promises better spatial consistency and mutual awareness for its participants. However, in the absence of IP Multicast and limited upload bandwidth of today's DSL connections, the feasibility of such	
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	3D multimedia environments: Design of a multi-sender 3D videoconferencing application over an end system multicast protocol Mojtaba Hosseini, Nicolas D. Georganas November 2003 Proceedings of the eleventh ACM international conference on Multimedia Full text available: pdf(872.17 KB) Additional Information: full citation, abstract, references, index terms Videoconferencing in the context of 3D virtual environments promises better spatial consistency and mutual awareness for its participants. However, in the absence of IP Multicast and limited upload bandwidth of today's DSL connections, the feasibility of such systems in supporting even a small group of users is in question. This paper presents the design and implementation of an awareness driven 3D videoconferencing application that runs on a peer-to-peer architecture and our own End System Mult Keywords: 3D videoconferencing, awareness management, end system multicast, peer-to-peer	
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	3D multimedia environments: Design of a multi-sender 3D videoconferencing application over an end system multicast protocol Mojtaba Hosseini, Nicolas D. Georganas November 2003 Proceedings of the eleventh ACM international conference on Multimedia Full text available: pdf(872.17 KB) Additional Information: full citation, abstract, references, index terms Videoconferencing in the context of 3D virtual environments promises better spatial consistency and mutual awareness for its participants. However, in the absence of IP Multicast and limited upload bandwidth of today's DSL connections, the feasibility of such systems in supporting even a small group of users is in question. This paper presents the design and implementation of an awareness driven 3D videoconferencing application that runs on a peer-to-peer architecture and our own End System Mult Keywords: 3D videoconferencing, awareness management, end system multicast, peer-to-peer Overlay & peer-to-peer networks: SplitStream: high-bandwidth multicast in cooperative environments	

terms

In tree-based multicast systems, a relatively small number of interior nodes carry the load of forwarding multicast messages. This works well when the interior nodes are highlyavailable, dedicated infrastructure routers but it poses a problem for application-level multicast in peer-to-peer systems. SplitStream addresses this problem by striping the content across a forest of interior-node-disjoint multicast trees that distributes the forwarding load among all participating peers. For example, i ...

Keywords: application-level multicast, content distribution, end-system multicast, peer-topeer, video streaming

11 Mobile wireless networks: A comparison of network and application layer multicast for mobile IPv6 networks

A. Garyfalos, K. Almeroth, J. Finney

September 2003 Proceedings of the 6th international workshop on Modeling analysis and simulation of wireless and mobile systems

Full text available: 📆 pdf(228.26 KB) Additional Information: full citation, abstract, references, index terms

In this paper we compare Network (IP multicast) and Application Layer Multicast (ALM) under a specific assumption: end hosts are wireless devices using the Mobile IPv6 (MIPv6) protocol. This comparison has three main goals. First, we analyze the implications of running multicast in a mobile, wireless network using Mobile IPv6 (MIPv6). Second, we run a number of simulations to verify whether the network performance issues are different than in wired networks. Finally, using these results, we try ...

Keywords: IP multicast, application layer multicast, mobile IPv6

12 Routing and forwarding: Manycast: exploring the space between anycast and multicast in ad hoc networks

Casey Carter, Seung Yi, Prashant Ratanchandani, Robin Kravets

September 2003 Proceedings of the 9th annual international conference on Mobile computing and networking

Full text available: pdf(170.59 KB) Additional Information: full citation, abstract, references, index terms

The characteristics of ad hoc networks naturally encourage the deployment of distributed services. Although current networks implement group communication methods, they do not support the needs of a mobile node that must locate one or more distributed servers. A node should not need detailed knowledge of network topology to choose servers with which it can communicate efficiently. To this end, manycast is a group communication scheme that enables communication with an arbitrary (user specified) n ...

Keywords: ad hoc routing, manycast, service location

13 Denial-of-service: Robustness to inflated subscription in multicast congestion control Sergey Gorinsky, Sugat Jain, Harrick Vin, Yongguang Zhang

August 2003 Proceedings of the 2003 conference on Applications, technologies, architectures, and protocols for computer communications

Full text available: To pdf(282.59 KB) Additional Information: full citation, abstract, references, index terms

Group subscription is a useful mechanism for multicast congestion control: RLM, RLC, FLID-DL, and WEBRC form a promising line of multi-group protocols where receivers provide no feedback to the sender but control congestion via group membership regulation. Unfortunately, the group subscription mechanism also offers receivers an opportunity to

elicit self-beneficial bandwidth allocations. In particular, a misbehaving receiver can ignoreguidelines for group subscription and choose an un ...

Keywords: congestion control, fair bandwidth allocation, misbehaving receivers, multicast, robustness

14 Analysis of reliable multicast algorithms for local networks

Paul V. Mockapetris

October 1983 ACM SIGCOMM Computer Communication Review , Proceedings of the eighth symposium on Data communications, Volume 13 Issue 4

Full text available: pdf(693.29 KB)

Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index</u> terms

Local networks offer unique opportunities for supporting multicast transmissions. This paper describes and analyzes several families of multicast algorithms for local networks. The algorithms examined provide reliable service by dealing with the effects of transmission errors.

15 Peer to peer systems: Borg: a hybrid protocol for scalable application-level multicast in

<u>peer-to-peer networks</u>

Rongmei Zhang, Y. Charlie Hu

June 2003 Proceedings of the 13th international workshop on Network and operating systems support for digital audio and video

Full text available: pdf(260.27 KB) Additional Information: full citation, abstract, references, index terms

Multicast avoids sending repeated packets over the same network links and thus offers the promise of supporting multimedia streaming over wide-area networks. Previously, two opposite multicast schemes -- forward-path forwarding and reverse-path forwarding -- have been proposed on top of structured peer-to-peer (p2p) overlay networks. This paper presents Borg, a new scalable application-level multicast system built on top of p2p overlay networks. Borg is a hybrid protocol that exploits the asymme ...

Keywords: application-level multicast, group communication, peer-to-peer, scalability

16 <u>Technical papers: Efficient micro-mobility using intra-domain multicast-based</u> mechanisms (M&M)

Ahmed Helmy, Muhammad Jaseemuddin, Ganesha Bhaskara

November 2002 ACM SIGCOMM Computer Communication Review, Volume 32 Issue 5

Full text available: pdf(1.03 MB)

Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index</u> terms

One very important metric in evaluation of IP mobility protocols is handover performance. Handover occurs when a mobile node changes its network point-of-attachment. If not performed efficiently, handover delays, jitters and packet loss directly impact applications and services. With the Internet growth and heterogeneity, it becomes crucial to design efficient handover protocols that are scalable, robust and incrementally deployable. Mobile IP (MIP) has been shown to exhibit poor handover perfor ...

17 Scalable application layer multicast

Suman Banerjee, Bobby Bhattacharjee, Christopher Kommareddy

August 2002 ACM SIGCOMM Computer Communication Review, Proceedings of the 2002 conference on Applications, technologies, architectures, and protocols for computer communications, Volume 32 Issue 4

Full text available: pdf(561.69 KB) Additional Information: full citation, abstract, references, citings, index

terms

We describe a new scalable application-layer multicast protocol, specifically designed for low-bandwidth, data streaming applications with large receiver sets. Our scheme is based upon a hierarchical clustering of the application-layer multicast peers and can support a number of different data delivery trees with desirable properties. We present extensive simulations of both our protocol and the Narada application-layer multicast protocol over Internet-like topologies. Our results show that for a ...

Keywords: application layer multicast, hierarchy, overlay networks, peer-to-peer systems, scalability

18 Session 6: networks (WAN/LAN): Design and implementation of multicast operations for ATM-based high performance computing Chengchang Huang, Eric P. Kasten, Philip K. McKinley November 1994 Proceedings of the 1994 ACM/IEEE conference on Supercomputing Additional Information: full citation, abstract, references Full text available: pdf(1.00 MB) This paper presents the results of an investigation into the efficient implementation of multicast operations for cluster-based parallel computing on Asynchronous Transfer Mode (ATM) networks. Both software- and hardware-based multicast operations have been implemented and studied on a three-switch ATM network testbed. Performance measurements are presented that illustrate how software approaches can best take advantage of switch-based network architectures, and what additional advantage can be ...

19 Unicast and Multicast in Next Generation Wireless Networks: Multicasting vs. unicasting in mobile communication systems

Janne Aaltonen, Jouni Karvo, Samuli Aalto

September 2002 Proceedings of the 5th ACM international workshop on Wireless mobile multimedia

Full text available: pdf(123.39 KB) Additional Information: full citation, abstract, references, index terms

We evaluate the multicasting gain over unicast in the cellular networks, where cells are engineered for a specific target call blocking probability. Our approach is Monte-Carlo simulation of dynamic multicast connections, and the traditional Engset model for the unicast traffic. We predict the gain given by multicasting by using earlier studied traffic patterns, and conclude that intervention of the network operator is needed to secure a significant multicasting gain.

Keywords: blocking, dimensioning, mobile networks, multicast

20 Unicast and Multicast in Next Generation Wireless Networks: Multicast in 3G networks:: employment of existing IP multicast protocols in UMTS Mariann Hauge, Øyvind Kure

September 2002 Proceedings of the 5th ACM international workshop on Wireless mobile multimedia

Full text available: pdf(338.06 KB) Additional Information: full citation, abstract, references, index terms

In this article we discuss the use of commonly deployed IP multicast protocols in UMTS networks. We analyze three possible UMTS multicast architectures, all employing standard IP multicast protocols. We study the architectures' ability to handle: group management, data-security, authentication and authorization of multicast source/receivers, multicast session identification, terminal mobility and collection of billing data. For one of the architectures we quantify the performance of the design f ...

Keywords: IGMP, SSM, UMTS, multicast, wireless internet

Results 1 - 20 of 200

Result page: $1 \quad \underline{2} \quad \underline{3} \quad \underline{4} \quad \underline{5} \quad \underline{6} \quad \underline{7} \quad \underline{8} \quad \underline{9} \quad \underline{10} \quad \underline{next}$

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